

ECONOMIC AND SOCIAL IMPACT OF THE DEVELOPMENT OF THE LIGNITE DEPOSIT AT ONAKAWANA

LABORATORY OF RESEARCH LIBRARY
MINISTRY OF THE ENVIRONMENT

1978



Ontario

Ministry
of the
Environment

The Honourable
George A. Kerr, Q.C.,
Minister

K.H. Sharpe,
Deputy Minister

Copyright Provisions and Restrictions on Copying:

This Ontario Ministry of the Environment work is protected by Crown copyright (unless otherwise indicated), which is held by the Queen's Printer for Ontario. It may be reproduced for non-commercial purposes if credit is given and Crown copyright is acknowledged.

It may not be reproduced, in all or in part, for any commercial purpose except under a licence from the Queen's Printer for Ontario.

For information on reproducing Government of Ontario works, please contact ServiceOntario Publications at copyright@ontario.ca

WORKING PAPER NO. 4

TASK FORCE ONAKAWANA

ECONOMIC AND SOCIAL IMPACT
of the
DEVELOPMENT OF THE LIGNITE
DEPOSIT AT
ONAKAWANA

PREPARED BY: PHIL SHAPLEY

 BERNARD GANONG

November, 1972

REPORT ON THE HUMAN ENVIRONMENT
ASPECTS OF DEVELOPING THE
ONAKAWANA COAL DEPOSITS

by

S. P. Shapley

On May 9, 1972 the Honourable Bert Lawrence, Q.C. announced in the Legislature the establishment of a Task Force "to investigate, in general terms, the environmental effects which would be brought about by the development of the Onakawana lignite deposits".

Today, environment means more than Man's natural surroundings - it is all of his surroundings that affect his well-being. This concept of environment is the one which emerged from the 1972 U.N. conference on the human environment held in Stockholm and is the one accepted by this report.

Specifically, this report will be concerned with two matters. Firstly, it will describe those human activities which occur in the northeast corner of Ontario that are directly dependent on the natural environment, regardless whether or not these activities will be affected by development of the Onakawana lignite deposits. Whether or not an effect is possible will be considered by other reports. Secondly, this report surveys some of the direct effects, including positive effects, that this project can have on northeast Ontario residents and communities, particularly Moosonee and Moose Factory.

Some Direct Non-Ecological Implications for
Northeastern Ontario Residents and
Communities

This examination will be concerned with:

1. the employment that may be created and how this relates to the employment 'needs' of the residents of Moosonee and Moose Factory,
2. a way to handle the negative impacts of the project,
3. providing a 'good' living environment for the workers and their families,
4. how the Onakawana project can be managed to enhance and strengthen northeastern Ontario communities.

Employment Potential and the General Economic
Impact

Two types of employment opportunities will be created by the development of the lignite deposits:

- (1) temporary employment opportunities for those persons hired to construct the electric power generating station and prepare the site for the mining operation, and
- (2) long-term employment opportunities for persons to work in the mining operation and run the generating station.

It will take approximately five years to build the generating station. Preparation for the mining operation will take much less construction and will probably require only a modest number of people. At the start of this probable five year period of construction, only about 100 people would be employed. The number of workers would rise to a maximum of 1,500 employees in the third year. This peak employment would last for only a few months. Then the number working would gradually decline to zero employees at the end of the fifth year.¹

1. Ontario Hydro

About 20% of the employment during construction would be for general labours. The rest of the workers would be people with the skills of trade union members, apprentices and supervisory staff.¹

The long-term employment in the mine and generating station would likely last about 30 years. Onakawana Development Limited, upon making certain plausible assumptions, estimates that 250 people would be employed in the mining operation. Approximately 20% of this employment is likely to be for general labours and the other 80% for more skilled persons, such as heavy equipment operators, maintenance crews (mechanics, machinists, welders, etc.), supervisory staff, and office and warehousing staff.

The 'best' present estimate of the number of persons that would be employed in the power generating station, is 150 people. The exact number of workers can only be determined when we know the specific type and size of the thermo station that will be built.

About one-quarter of the station's staff could consist of low skill and less than high school educated persons. Most of the rest of the employees would need to be trained 'operators' who possessed the equivalent of a twelfth grade education.¹

In summary, the long-term employment potential is in the neighbourhood of 400 jobs. The exact number hired will depend on what is the most feasible way of developing the mine and generating station. Only about 20% of this employment will be in the general labour category.

1. Ontario Hydro

The activity during the construction period will produce only a short-term economic boom for northeastern Ontario. However, the construction may stimulate the establishment of local businesses that will continue to function after the construction period ends and which will provide new services and industry to the northeastern Ontario area.

The Unemployment Situation in the Moosonee-Moose Factory Area

The Moosonee-Moose Factory-Moose River Crossing area badly needs more employment opportunities. Approximately 200 residents of these communities which have a total population of 3,000 persons (1) have applied each month for the past six months through Canada Manpower for work. Some months this number has been higher than 300. The Canada Manpower representative in Moosonee also estimates that another 50 persons were seeking employment but did not use the services of his office. If a working population of 1,000 persons is assumed, there was an under-employment rate of higher than 20%. (The term under-employment is used instead of unemployment because some of the 200 persons applying may have short-term employment as guides, on Local Initiative projects, trapping etc.) (2)

- (1) Population estimate by J. E. A. Moore, former Community Resource Officer, Moosonee.
- (2) The Manpower representative comments that many people are looking for work so that they can have an income higher than an unemployment or welfare cheque. Of the 200 persons looking for work, 120 are males. Eighty-five per cent of the 200 are between the ages of 20 and 35 years. Seventy of the 200 have a ninth grade or better education. Most of the young people can be educationally upgraded.

Many more than 200 local residents will likely be looking for work in the future. The Manpower representative suggest that in two years, 300 or 400 people may want work and yet will not be able to find it. This situation arises because more young people will be seeking employment and some of the present sources of employment are likely to disappear. Yet, despite this 'need' for more job opportunities, there is no solid indication that the number of jobs available will increase in the next fifteen years. (1)

The Major source of the rising number of persons seeking work is the many young people in the Moosonee-Moose Factory area. At present, approximately 50 native students per year terminate their education and seek employment. (Almost all of these students have completed grade 8, probably better than half complete grade 9 or 10 and a few complete high school. The average length of stay in school is increasing.) Because of the large number of students in elementary school, this number will soon rise to 70 or more.

Despite many of the students (probably the majority of them) receiving part of their high school education in the 'south', more than half of them remain in Moosonee and Moose Factory after their schooling is completed. Local opinion is strong that this portion

- (1) It is not possible to safely predict that the Baie James project of Quebec will stimulate the local economy. Firstly, there is no high degree of certainty that the project will be built. Secondly, this project could lead to a Quebec town replacing Moosonee as the transportation center for the James Bay area.

The columbian deposit near Moosonee is not likely to be developed for at least fifteen years.

of students will continue to remain even if work is not available.(1)

Even if the young people remain knowing there is little chance they will get work, most of them will still want jobs. The present crop of young people is actively seeking employment and most desire a level of consumption which requires a wage income. (2) Given this and given the above information on the persons remaining, it appears that each year 30 to 40 new people will be seeking employment in Moosonee and Moose Factory.

Even though most of the ex-high school students currently in the community have been able to obtain some work, these sources of employment probably can not provide many jobs for future ex-students. In addition, some of the currently available work is likely to disappear. The future employment possibilities associated with some of the major sources of work, are discussed below.

The hospital, the school and the Hudson Bay Company store in Moose Factory employ a total of about 165 native persons. (The hospital for natives employs about 125 Indians.) These

- (1) Dave Lightwood, former employee of the Department of Indian Affairs and Northern Development and currently at the Moosonee Education Center, says that the young people come back because:
 - (1) of the low cost housing available to many,
 - (2) Indian life is 'easy' (no high pressure living?),
 - (3) most important, they prefer to maintain ties with their Indian community.
- (2) From Canada Manpower representative and inferred from my discussions with other people.

institutions have absorbed many of the students that have recently finished school by employing labour intensive methods. If an economy drive comes, some of these positions will have to be terminated. In addition, if the Province builds the 30 to 40 bed hospital it is reported to be planning for Moosonee, the large hospital for natives would very likely close (1) and be replaced by some form of simple medical service for the residents of Moose Factory. This closure plus any economy drives would likely result in the net loss of up to 70 or more jobs in the Moosonee-Moose Factory area, excluding any secondary unemployment effects.

The military base at Moosonee employs, on the average, 75 local persons. Local residents believe that this base is becoming obsolete and will be closed in five or ten years. They hear rumours at the base from the military personnel that support these feelings. However, the commander of the base denies there will be any closure in the near future.

Many persons (number unknown to me) have been temporarily employed because Local Initiative and winter works grants have been available. Since these programmes may be terminated or greatly reduced in the future, the jobs available from these sources may be reduced.

In summary, it is quite likely that each year 30 to 40 local young people will be added to the list of those seeking work. In addition, some of the current sources of employment may disappear,

(1) Dr. N. L. Fraser, Zone Director, Department of National Health and Welfare, Moose Factory.

or economy drives may reduce the number of people these sources can hire. Also, it is not possible to predict with any certainty that a significant number of new jobs will be created in the next fifteen years. Ten years from now, it is quite plausible that 300 persons, and perhaps 500 persons, could be unemployed or under-employed in the Moosonee-Moose Factory area.

The Ability of Moosonee Area
Residents to Fill Positions
in the Onakawana Mine
and Generating Station

Given the 'need' for more employment opportunities in the Moosonee-Moose Factory area, there arises the question of whether local people could satisfactorily fill the positions in the Onakawana generating station and mine. That is, do these people have or can they obtain the background required for the more skilled jobs, and are they likely to be reliable and productive workers?

Education and trainability

Most young locals are obtaining enough education to function as truck drivers (and probably as heavy equipment operators) since almost all of these men graduate from grade 8. Because many of them complete grade 10, perhaps 25 or more per cent of the young people should be able to function as heavy equipment mechanics, electricians, stockmen, welders, etc. And since a fair number in the future will have a grade 12 education, some young people probably could be trained to be operators in the generating station.

To date, the Moosonee Education Center has graduated 20 persons who have been trained to operate construction equipment as large as the D-6 caterpillar tractor. Another 20 have received training that enables them to operate smaller equipment.

In summary, most young people are receiving enough education that they should be able, with the proper training, to function in jobs of a higher level than labour.

Reliability and performance

Many local people have performed satisfactorily on jobs that require regular hours of work. The personnel officer at the military base claims that he is satisfied with the work of his native employees. The approximately 125 native employees at the hospital in Moose Factory work regular hours and perform well. (1) Similarly, the natives employed in the school and at the Hudson Bay Store in Moose Factory are very reliable workers. Eighteen men worked on a road project for one month straight (one-day off) for ten hours a day at \$2.00 per hour. Attendance was excellent.

Native people have also performed satisfactorily for mining companies. Twenty-four Crees that were recruited after careful screening, performed as well as non-native workers at a copper mine in Chapais, Quebec. Most of these men were labourers

- (1) Dr. N. L. Fraser, Zone Director, Department of National Health and Welfare, Moose Factory.

doing surface work. (1)

A number of Indians, particularly the young, were excellent above and below ground workers at the Cochenour Gold Mine near Red Lake, Ontario. Other natives performed very poorly.

Eskimos became better underground miners at Rankin Inlet than white workers. (2)

The Crees were good construction workers at the northern Ontario radar stations.

Despite these above listed recent successes in employing native people, in the past the native was often, by Western standards, an unreliable worker. My argument is that today, under the right conditions, one can expect good work performance from the Crees for many types of work.

There are plausible arguments that explain the past failures of Indians and yet justify the claim (of church, government, education, and business personnel in Moosonee and Moose Factory) that the young native of today can be a reliable worker. Firstly, in the past, the native was often asked to work in a cultural-social environment that was very alien to his traditional culture. Today, natives accept many Western ways, and thus, they can work better in White Man's surroundings. Secondly, the native is

- (1) These Indian workers were recently replaced when a hire French-Canadian policy was adopted. This is information from Bishop Clarke of the Anglican Church, Noranda, Quebec.
- (2) Information from Allan Moon, Regional Development Branch. Perhaps the Eskimos are a success because considerable attention has been paid to maintaining their social structure.

now better educated. Thirdly, many Crees are accepting the 'work ethic'. Fourthly, there is now a desire for a level of consumption that can only be supported if the consumer works regularly. Finally, and most importantly, most young Moosonee and Moose Factory natives are now performing well under 'Western-type' working conditions.

The future unemployment and under-employment in the Moosonee-Moose Factory area (quite likely 300 persons and perhaps 500) and the several hundred thousand dollars a year that this would cost in welfare, etc., suggest that the Province should:

- (1) make a serious attempt to provide the local people with the skills required for employment at Onakawana.
- (2) see that working conditions, to the extent possible, are adjusted to make this employment attractive to these people.

The people I talked to in Moosonee and Moose Factory urge certain things to help insure the success of 'locals' as workers:

- (1) These people stress that 'locals' should be treated in the same manner as other workers in the sense that they must meet the same performance standards, receive the same considerations, the same type of quarters, etc. (this though, does not invalidate the desirability of special training to provide natives with needed skills, etc.)
- (2) The Rev. John Clarke of Moosonee argues that if natives are to develop the mental attitude that enables them to succeed, they need to be told well in advance that they will be given an opportunity for employment, that special training will be available, if needed, that they must meet the same work standards of other employees, etc.
- (3) Natives should have an opportunity to live in a native community, if they desire. Whether or not it is important for them to live at Moosonee or Moose Factory, I do not know.

Concluding comment regarding employing 'locals'

Though there is a need for many more jobs in the Moosonee-Moose Factory area, this, by itself, should not dictate that the coal deposits be mined. More than \$400,000 in capital investment must be made for each job created. If the Onakawana project is quite uneconomic, it probably should not be built. A less expensive way can be found to provide the needed work.

A Way of Dealing with
the Negative Impacts of the
Project

Whenever the Onakawana project may have a negative effect on people, a serious attempt should be made to find ways of avoiding the occurrence of the effect. When avoidance is difficult, perhaps the project managers should consult with a committee that would represent the parties harmed. Together they would search to find the most appropriate solution to the problem, short of making the Onakawana project unfeasible. If the effect is unavoidable, the consultation would help the parties to gracefully accept the situation. This consultation would also help convince people that the 'world' does consider their interests, that their situation is not hopeless. In addition, the consultation would contribute to strengthening the leadership of the Moosonee community.

Providing a Good Living Environment
For the Workers and Their Families

It is very important to most workers and their families that

they be able to live in a community which is of their culture, which fits their life style, and which provides them with important services. For instance, most natives will likely want to live in a native community such as Moosonee or Moose Factory or in a native community at Onakawana. Most non-native employees will desire to live in a fairly large community, such as Cochrane, Timmins, etc., where they and their families can attain the amenities of life that most of them seek - good schools, a varied social life, libraries, etc.

To make this choice possible, economical and convenient transportation will need to be available to and from Onakawana to Moosonee and Cochrane. Workers could drive from Cochrane to other towns, such as Timmins, if they chose to live in these places.

(If most of workers live in the established communities, such as Moosonee, Onakawana would be mostly a 'bunk-house' town).

Enhancing and Strengthening Existing Northeaster Ontario Towns and Cities

Here we are concerned with how the project can be managed:

- (1) To strengthen these communities;
- (2) To enrich live in these places;
- (3) To attract residents to these towns and cities who will remain for many years and who will take an active part in community activities.

These three goals are served by:

- (1) making it possible for the Onakawana employees to live in the established towns,
- (2) managing the project such that it attracts the largest possible number of workers and their families to live in the established towns,
- (3) managing the project such that it attracts 'permanent' workers.

The importance of these three factors to the above three goals and how they can be incorporated into the planning of the project, are discussed below.

Existing or established town means a community that exists at the present time and which possesses some infra-structure to build on. Kapuskasing, Moosonee, Cochrane, Iroquois Falls, Timmins, etc. are examples of such communities.

Making it possible for employees to live in established communities

Making it possible for the Onakawana employees to live in the established communities, will produce several benefits:

- (1) It will widen the economic base of these communities:
- (2) It will likely increase the amount of money spent in the North for persons living at Onakawana would likely order many of their goods through a catalogue instead of buying them at a store in the North. In addition, it will increase the likelihood that the workers and their families will stay in the North which in turn leads to them to spend more, such as buying a house in Cochrane.(1)

As stated before, if the workers are to live in Cochrane,

- (1) Allan Moon, Regional Development Branch

Moosonee, etc., convenient and economical transportation will have to be available from Onakawana to Cochrane and Moosonee. In addition, working hours and days will have to be arranged so that the workers can spend considerable time at home. This might require that an employee would put in three 12-hour days and then would have four days off.

Attracting the largest number of people who will remain in Northern towns

Life will be enhanced most in the existing Northern communities if the largest possible number of the Onakawana workers and their families can be persuaded to 'settle' in these communities. This serves to stimulate the provision of additional social, cultural, and economic services. Because more services are available, a higher proportion of the residents of a community will consider the town to be their 'home'

To accomplish these ends, the Province:

- (1) should, as was recommended earlier, encourage
 - (a) the provision of economical and convenient transportation from Onakawana to Moosonee and Cochrane, and
 - (b) the arrangement of working hours and days such that the workers find it convenient to commute from the established towns to Onakawana;
- (2) should encourage giving preference in hiring to northeastern Ontario residents - these people are more likely to stay in the North and 'settle' in northern communities;
- (3) should make it convenient for the workers to live in the larger communities of Cochrane, Timmins, Kapuskasing, etc. because only cities of this size will have the amenities necessary to 'convince' many non-native workers to 'settle' in the North. Native workers, however, may insist on living in Moosonee or Moose Factory.

A regional development consideration

According to personnel in the Regional Development Branch, placing the workers in towns as small as Fraserdale would not contribute to regional development goals. There goals are served best if the workers settle in the larger communities.

SUMMARY

The above analysis considered how the Onakawana project could be managed towards the following ends:

- (1) To reduce any serious unemployment among residents of Moosonee and Moose Factory;
- (2) To reduce the effects of any negative impacts of the project;
- (3) To provide a 'good' living environment for the workers and their families;
- (4) To enhance and strengthen northeastern Ontario communities.

The analysis concluded that serious unemployment would quite likely continue to exist among Moosonee and Moose Factory residents. Further, it suggests the following recommendations:

- (1) The residents of northeastern Ontario should be given first priority in hiring, provided they can qualify for the positions;
- (2) Because a serious unemployment problem will likely continue to exist in Moosonee and Moose Factory, special consideration should be given to hiring the residents of these two communities, provided they qualify. Training should be available to these persons so that they can upgrade their skills and education to qualify;
- (3) The Onakawana project probably should not be undertaken - if it is quite uneconomic. Less costly means of providing work can be found.
- (4) Certain suggestions were made to assist natives in becoming reliable workers. Their suggestions should be followed.
- (5) Working hours and transportation to and from Onakawana should be arranged so that the workers can live in Moosonee, Moose Factory, Cochrane, Timmins and other large established communities.
- (6) Any negative impacts of the Onakawana project should be discussed with the parties that are affected.
- (7) Regional development goals suggest that the workers should not locate their homes in small communities such as Fraserdale.

ECONOMIC AND SOCIAL IMPACT OF ONAKAWANA
LIGNITE DEPOSIT DEVELOPMENT

by Bernie Ganong

The following is an assessment of the probable economic and social impact of the proposed lignite mining operation and its associated electric power generating station at Onakawana.

It is visualized that a power station of 900 megawatts capacity will be constructed, over a five-year period. At the peak of construction activity, a work force of about 1,650 men will be employed. Preparation of the mine site, to be carried on concurrently, will involve relatively few men.

The operating phase is foreseen as a minimum of thirty years. It is estimated that 250 men will be employed at the mine site during operations, with a further 150 men needed to run the generating station.

A. PARAMETERS OF THE ANALYSIS

The local economic impact from a project of this type will come from primary wages and salaries generated. Consequently, impact calculations are confined to the area from which the bulk of the required labour force is likely to come. It is considered that this area will approximate Cochrane District. Therefore, if

demand for specific goods and services generated at Onakawana cannot be met, or is not likely to be met, by a supplier within Cochrane District, then that demand is not considered to have an economic impact upon the District. On this basis, the capital outlay of \$290 million for the generating station and mine, as estimated by Manalta Coal Company, will have a considerable impact, but far from the order of \$290 million, in that machinery, equipment and construction material, will come from outside the District. Of local significance will be part of the wages and salaries paid during construction, transportation charges payable to the Ontario Northland Railway, and local purchases of supplies and equipment (likely to be minor). It seems unlikely that more than some 20 per cent of the disposable income of the total work force plus wages paid workers from the District plus an estimated \$4 million paid to the Ontario Northland Railway for transportation, plus miscellaneous supplies purchased will have local impact. These flows would add up to \$27 million to \$30 million. Although small in relation to the total outlay, this is a considerable amount.

The economic sectors considered to fall within the impact framework have been derived by judgement, not through an exhaustive identification process with either Manalta Coal Company or Ontario Hydro. Thus, during the construction phase

only the following sectors are considered to be affected in a significant way: construction, transportation services, retail trade, personal services; and households (labour supply). During the operating state the sectors which will be affected include the above, plus storage, communication and utilities, finance, insurance and real estate, community services, and local government.

The primary impact during the construction stage, as already noted, will come from wages and salaries paid to local residents, plus that part of total work force income spent locally on food, recreation, accommodation, and other goods and services, plus transportation charges on movement of equipment, supplies and materials to the site, plus miscellaneous local purchases of capital goods and operating supplies.

Secondary impact will be derived from employment and further income generated in satisfying demands arising from the first round of spending by resident members of the work force, etc. Third and possibly subsequent rounds will also be generated, but no attempt has been made to calculate effects beyond the primary impact stage.

The primary impact during the operating stage will come from wages and salaries paid to resident members of the work force, purchase of freight transportation services from Ontario Northland Railway, and local purchases of other goods and services needed at the mine and station sites. Secondary impacts include stimulation of the construction industry to produce housing for new residents, plus required school space, new shopping and service outlets and the like. It includes wages and salaries paid to those providing such ancillary and supporting services as retailing, health, education, local government, transportation, finance, insurance and real estate services. Third round spending will come from the demands of new workers necessitated by the second round. Because of the limited size and simple economic structure of the District, its economy is very "open" and multiplier effects are almost completely confined to non-manufacturing sectors. The increased demand for manufactured goods will be satisfied almost completely from other parts of Canada or from abroad.

Application of overall multipliers derived in urban areas could be misleading, because of the "leakage" factor referred to above and the relative absence of manufacturing in the District. Therefore, because time limitations preclude an exhaustive analysis, estimates of impacts have not been carried

beyond the second round of spending.

B. IMPACT CALCULATIONS

Separate analyses have been made of the impacts flowing from the construction stage, and the operating phase, the latter with an assumed life of thirty years. Impacts from construction have only been calculated for the primary level.

14.0 Construction Phase

Construction of a 900 Mw thermal generating station (two 450 Mw units) will take five years. On the basis of Ontario Hydro's experience about 1,650 men will be employed at peak, of whom about 1,450 will be tradesmen and labourers and about 200 will be supervisory staff.(1)

The expected variation in size of the labour force over the five-year period is as follows:

end of first year	-	400
end of second year	-	1,300
middle of third year	-	1,650
end of third year	-	1,450
end of fourth year	-	800
end of fifth year	-	50

(1) Information from Generation Concepts Department, Ontario Hydro

Again, Hydro's estimates of kinds of trades required, for a project of comparable size, indicate that the peak labour force would be made up of:

Pipe Fitters	- 27%	Boilermakers	- 15%
Electricians	- 12%	Ironworkers	- 11%
Labourers	- 8%	Carpenters	- 7%
Operating Engineers	- 7%	Others	- 13%

Erection of draglines, construction of buildings and preparation of the mine site for production will involve at peak a total of 50 to 75 men. About half the work force will be skilled (welders, steel erectors, heavy duty machanics, electricians) and half will be general labour.(2)

14.1 Money Flows

At peak employment, wages and salaries paid at the generating station construction site will total an estimated \$23 million per year (1972 wage levels).(3) Estimated wages and salaries will total about \$55 million over the five year construction period.

(2) Information from Manalta Coal Company Ltd., Calgary.

(3) Based on estimated wage and salary rates provided by Generation Concepts Department, Ontario Hydro

Wages and salaries paid at the mine site at peak employment levels during the preparation phase will total \$850,000-\$900,000 per year (1972 wage levels). The outlay for labour could total as much as \$2 million over five years.

Only that part of labour income accruing to residents of the Cochrane District, plus that part of income of the remainder of the work force spent locally for goods and services, will have an impact upon the District.

It is very roughly estimated that up to one-third of the total work force required for station construction and mine preparation can be expected to be drawn from Cochrane District. This will mean that at peak employment levels close to 600 local workers will be employed. Effective buying income (estimated as 70% of total income) generated by these workers can be expected to add up to \$13 million to \$14 million over the five years of construction activity.

It is also estimated that effective buying income of non-local workers will total at least \$30 million to \$32 million over the construction period. Perhaps as much as 20 per cent of this will be spent within the District for goods and on such things as restaurants, hotels, transportation, and recreational

facilities. This type of spending, assuming the 20 per cent figure, would ~~total~~ \$6 million or more over the five years.

It has been estimated that up to \$4 million in added freight revenue will accrue to Ontario Northland Railway over the construction phase.

Part of equipment, building needs and everyday supplies during the construction phase will be obtained locally but the bulk of such goods will be obtained on a contractual basis, and undoubtedly large contractors will be involved. Local involvement, aside from these minor retail sales, will be limited to storage and transshipment of materials obtained from outside.

14.12 Summary of Primary Impacts

The primary impact should include the provision of as much as 1,400 man-years of employment at the construction site for residents of Cochrane District, implying the generation of as much as \$13 million to \$14 million in labour income. A further \$4 million in increased freight revenues will accrue to the Ontario Northland Railway.

Second round spending by the resident recipients of income and by other members of the work force on recreational pursuits, will increase receipts of existing business establishments of the District, and will increase employment in at least the trade and personal service categories. However, estimates of the location and magnitude of increased expenditure and employment at this time would be conjectural.

Experience in other isolated projects during the construction stage indicates that few members of the work force would be likely to bring families to the general area of the project. Consequently, it is not likely that urban areas in the District would experience a significant increase in housing demand during the construction period.

15.0 Operating Phase

The estimated economic life of the proposed mine and generating station is a minimum of 30 years, according to Onakawana Development Limited. This involves an annual production of approximately five million tons of lignite. Primary impacts during the operating stage are estimated as follows:

15.1 Employment

The estimated size of the mine work force, including supervision, will be about 250 men.⁽⁴⁾ The total staff required

(4) Information from Manalta Coal Company Ltd., Calgary, Alberta

for the generating station will be about 150.⁽⁵⁾

Of the mining work force of 250 men, an estimated 39% or 95-100 men will be heavy equipment operators (dragline, bulldozer, shovel and truck), about 22% or about 55 men maintenance men (heavy duty mechanics, machinists, electricians and welders), and a further 22% general labour such as pump men and oilers on shovels and draglines. About 15 men will be required as office and warehousing staff and the remaining 10% or so will be such supervisory staff as mine managers, assistants, pit foremen, engineering and electrical supervisors.

Of the staff required to operate the thermal generating station, about 120 will be control room operators and senior maintenance personnel. These employees would have undergone extensive technical training. The remaining staff will be made up of maintenance men and junior mechanics' helpers.

15.12 Money Flows

Annual wages and salaries payable to the proposed mine work force have been estimated, using recent union wage rates

(5) Information provided by Generation Concept Department, Ontario Hydro.

applicable to northeastern Ontario. Wages and salaries payable at the generating station have been estimated from base data supplied by Ontario Hydro. Aggregate wages and salaries at the mining operation are calculated to total \$2,900,000, with a further \$2,400,000 payable at the generating station. The annual total of \$5,300,000 refers to 1972 wage levels, and no attempt has been made to estimate wage escalation over the next few years. It is assumed that the entire work force will live in Cochrane District and that the entire impact of wage and salary payments will fall within the District.

Other primary money flows will stem from payments to Ontario Northland Railway for freight movement. No estimate for this sector are available, but it can probably be assumed that payments will not exceed \$200,000-\$250,000 per year.

Again, no estimates for local purchases of supplies or equipment are available, but it seems unlikely that they will exceed \$100,000 per year.

15.13 Secondary Impact

The total population increase resulting from establishment of a new work force of 400 men has been calculated on the basis that 100 workers will be drawn from the Moosonee-

Moose Factory area, and that the remaining work force of 300 will be drawn from outside the District. A population increase factor of 3.5 for each worker from outside has also been assumed.⁽⁶⁾ Consequently, the population increase would total 1,050.

It is estimated that up to 50 new jobs in retailing and personal services will be created by demand from the additional population and by increased spending by workers resident in Moosonee-Moose Factory.⁽⁷⁾

Employment in community services will also be strongly affected by demand from the calculated population increase. An additional school population, assumed as 450, will likely create at least 30 additional jobs in education (teachers, other professionals, maintenance personnel). It is calculated that up to 55 jobs will be opened up in community services, in total (education, health services, religions, welfare).

(6) The permanent population likely to be attracted by a total of 400 jobs has been estimated by calculating the ratio of labour force to total population as of 1961, in two relatively isolated labour markets -- Iroquois Falls and Smooth Rock Falls. In the former, total population is 3.3 times the labour force, and in the latter it is 3.0 times larger. The ratio of Ontario males between the ages of 20 and 64 to total provincial population in the 1971 census was also calculated as an additional gauge, and was found to be 3.7. Accordingly, it seems likely that associated with the jobs (it is assumed that 100 jobs would be filled by residents of Moosonee-Moose Factory and area who

It is also likely that 40-50 jobs will be created in other sectors -- the Ontario Northland Railway (additional train crews to operate extra passenger service between the work site and dormitory areas), other transportation, communication and storage services, and local governments. It is therefore possible to foresee a secondary impact totalling up to 150 new permanent jobs.

A further facet of secondary impact will be the demand for new housing. It is likely that the 100 assumed workers from Moosonee-Moose Factory will already have housing available. This will leave a potential 300 workers with a demand for housing. Investigation of housing vacancy rates in Fraserdale and Cochrane, the two most obvious locations for workers' families, indicates

(6) Cont'd.

would continue to live in the same locality) would be a population increase factor in the range of 3.0 to 4.0. A factor of 3.5 has therefore been used.

(7) The estimate of new retailing jobs was derived as follows:

Sales Management reports that total retail sales in Cochrane District in 1971 were \$132.8 million, and that persons employed in retailing totalled 2,371. Thus, average sales per employed person were \$56,000. It is assumed that at least one-third of sales from increased disposable income would occur in existing establishments, without increases in employment and that the remainder would create new jobs.

no vacancies in the former⁽⁸⁾ and very few in the latter.⁽⁹⁾ Accordingly, it must be assumed that only a limited number of rental units will be available for a proportion of single workers, plus availability of the limited number of rental units, it is calculated that up to 200 new units will have to be built.

Best estimates are that cost of construction of 200 houses in northeastern Ontario will total close to \$5 million.⁽¹⁰⁾ If it is assumed that demand for the 200 units were to be met, in one location, over a two-year period, then at least 100 construction workers (carpenters, painters, electricians, plumbers, etc.) would be required on a continuous basis over that period.⁽¹¹⁾ This would not include labour needed to lay out and service a subdivision. It is likely that wages of at least one million dollars would be paid to the housing construction workers over

(8) Information from Operating Superintendent, Ontario Hydro, North Bay.

(9) Report on the Need and Demand for Ontario Housing for Families, Town of Cochrane, Ontario Housing Corporation, August, 1970.

(10) Based on indications from Ontario Housing Corporation that the price of new three-bedroom houses in the Cochrane area ranges from \$15,000 to \$30,000.

(11) Based on information supplied by Engineering Division, Ontario Housing Corporation, Toronto.

each of the two years of the construction period. Only a part of this would be spent within the District, but it would seem likely that \$500,000-\$600,000 per year would pass through local hands. Some impact will also be felt from local purchase of construction materials, but no estimate of the likely amount can be made.

16.0 Summary of Primary and Secondary Impacts

In terms of employment, the primary impact is the creation of 400 jobs. The sum of demands in the primary stage would be expected to create a further 150 permanent jobs as a secondary impact, plus about 100 temporary jobs in construction.

Money flows in the primary stage would add up to at least \$4.6 million per year (disposable labour income, transportation services, local purchase of goods and services). Secondary impact will include further disposable income of about one million dollars per year from new jobs created by the first round impact, plus temporary labour income of another \$500,000, plus perhaps another \$200,000-\$300,000 per year from induced purchase of goods and services. Total money flows from primary and secondary rounds, exclusive of temporary activity, will come close to \$6 million per year.

No attempt has been made to calculate effects beyond the secondary impact level, but it seems likely that subsequent rounds of spending will result in the creation of perhaps a further 50 or so jobs. This would give an overall job multiplier factor of 1.5 (400 jobs at the station and mine would lead to a further 200 jobs in other activities).

17.0 Availability of Local Labour

Of interest to the Government is the prospect for employing local labour. On this question, the Manager, Canada Manpower Centre, Timmins, is of the opinion that the required labour for both generating station construction and mine preparation could be drawn from northeastern Ontario. He cites the example of the opening of the Texas Gulf Sulphur property near Timmins, where a skilled work force of 1,000 men was readily assembled, some coming from as far as Sault Ste. Marie and Sudbury.

Of further and more particular interest is the possibility of employing native labour from the Moosonee-Moose Factory area. On this point, it has been determined that at the present time, up to 300 workers with the kinds of skills required at either the generating station construction site or the mine site are located

in the Moosonee-Moose Factory-Fort Albany and Attawapiskat area, many of them unemployed.

The kinds of skills found in the labour force in the area are listed in Table I. Practically all of the listed skills are expected to be in demand at Onakawana during the construction phase.

Insofar as the operating phase is concerned, it appears that up to 90 per cent of the jobs likely to be created in the mining project are in trades in which some of the Moosonee-Moose Factory native labour force have been trained. In theory then, up to 225 jobs for which the local labour force have some training and/or experience could be available. A further thirty jobs in generating station operation (maintenance men and junior mechanics helpers) would be of the type for which the Moosonee-Moose Factory labour force presumably qualify. In total, then, just over 250 jobs for which the nearby native labour force nominally qualify, could be created within a decade.

The 120 or so control room operator jobs in the generating station are also open to the native labour force in that a minimum of a Grade 12 education is required and this educational level is being attained by an increasing proportion of the entrants to the labour force in the Moosonee-Moose Factory

TABLE I

Experienced and/or Trained Men Available in the
Moosonee-Moose Factory-Fort Albany-Attawapiskat
Area, November 1972

<u>Type of Skill</u>	<u>Number</u>
Construction labourers (including rough carpentry)	150
Carpenters (on-the-job training, mainly)	22
Electricians (most with journeyman's certificate)	11
Bricklayers	10
Welders (half have had on-the-job training, and half have had training courses)	10
Pipefitters	5
Heavy Duty Mechanics (2 have completed a 10 month diesel mechanics course)	12
Machinists	1
Ironworkers	1
Auto mechanics	10
Tandem truck drivers	29
Bulldozer Operators	9
Loader Operators	9
Backhoe Operators	11
Grader Operators	6
Shovel Operators (hydraulic)	4
Diamond Drillers	7
Electric technicians (have 2 years of community collage)	6
Mining assistant	<u>1</u>
Total	314

Source: Bill Louttit, Branch Manager, Canada Manpower Centre, Moosonee.

area. However, Ontario Hydro trains its operators by rotating them, over an extended period, through a variety of work experiences in a variety of locations. Such a training program, with its attendant series of moves could conceivably hamper attempts to recruit members of the native population of Moosonee and area.

A rough indication of the quality of the labour force in Moosonee-Moose Factory and area can be obtained from statistics on unemployed males registered at the Canada Manpower Centre at Moosonee as of October 31, 1972. These show that of the 135 males registered, 68 have a Grade 8 education or less, while 58 have Grade 9 or more and 10 have some college training. A substantial number, 38 out of 135, have taken Canada Manpower Training Plan trades training. Courses represented include heavy equipment operation, small motors, advanced carpentry, rotary diamond drilling, electronics and welding. Those with work experience include dump truck drivers, bulldozer, loader backhoe and grader operators (with experience ranging from 2 to 15 years), carpenters, diamond drillers, small engine mechanics and a hoisting engineer. The age categories of the registered unemployed are: less than 24: - 41; between 25 and 44: - 81; over 45: - 13.

As noted, of the 400 jobs to be filled during the operating phase, about 250 are of the type which the foregoing superficial review of qualifications indicate could be filled by the Moosonee-Moose Factory labour force. However, for the purpose of making impact calculations, it has been assumed that 100 workers from the area would be employed.

18.0 Other Miscellaneous Factors

Two factors of peripheral interest to this analysis are: (a) consideration of possible housing locations for the expected inflow of population; and (b) adequacy of existing Ontario Northland Railway equipment and scheduling to handle passenger traffic between Onakawana and locations of families, during the operations phase.

19.0 Possible Locations for New Population

Among possible locations for workers' families, three stand out -- Cochrane, Moosonee, and Fraserdale. Although Moosonee, 60 miles from the construction site, is the nearest urbanized area, it has no road connections with the rest of the province, and its ability to absorb a sizeable increase in housing without a relatively expensive addition to urban infrastructure is questionable. Fraserdale already is a substantial community,

has a good road connection to Highway 11, is equipped with recreation facilities, and presumably could be expanded.

However, it still has the disadvantages of lying 60 miles from Onakawana and of being a relatively isolated community.

Although Cochrane is 126 miles from Onakawana, via the Ontario Northland Railway, it has a population of more than 5,000, provides a range of services, and is located on Highway 11. In addition, a recent Industrial Survey report by the Ministry of Industry and Tourism indicates that water and sewage services are adequate for a population of 7,000, a reserve which would accommodate the population increase envisaged.

In any event, the fact that it is not feasible to house families at the Onakawana work site, but rather at a distance of at least 60 miles, indicate the need for setting up a system whereby the employee could work a solid block of time and then have a number of days off. This in turn would mean that substantial sleeping and dining facilities will have to be provided at the site, and that train schedules to allow convenient commutation between the site and Fraserdale or Cochrane, and the site and Moosonee, would have to be established.

A permanent work force of 300, exclusive of those drawn from Moosonee-Moose Factory and area, will have major implications in terms of housing demand, regardless of the settlement point chosen. Even if allowance is made for a proportion of single workers, and for availability of a limited number of rental units, it seems likely that at least 200 housing units will have to be built. If Cochrane were to be selected as the settlement point it appears necessary to construct practically all of the housing units needed. According to the latest housing demand survey by the Ontario Housing Corporation at the end of December, 1969, housing stock consisted of 1,201 units. A total of 45 units were added to the stock over the 1966-1969 period. The report indicated that the supply of rental units was very limited, particularly new apartment units. It was also reported that the price of new three-bedroom houses ranged from \$15,000 to \$30,000.

On the basis of the above estimates and reported data, the cost of providing housing for workers attracted to Onakawana will be substantial. Obviously, a large increase in housing construction activity will be called for. It is estimated, very roughly, that housing costs ranging up to \$5.0 million will be

incurred. (200 houses at a value of \$25,000 per unit). As noted, Cochrane appears able to accommodate the projected increase without additions to water supply and sewage facilities.

An alternative possibility would be to house all of the Onakawana labour force at Fraserdale, or just that part of it (exclusive of labour coming from Moosonee and area) working at the generating station. Given the latter possibility, up to 120 housing units would be needed at Fraserdale, with as many as 80 still needed at Cochrane.

A brief review with Ontario Hydro personnel of Fraserdale's facilities indicates that its housing supply of 85 units are all occupied, and that an increase in housing would likely call for an expansion of the community's water filtration plant and sewage lagoon system. (it should also be noted that Fraserdale has a primary school, but that secondary school students are bussed to Smooth Rock Falls, a one-way trip of 47 miles).

It is not feasible in this analysis to estimate total housing costs -- housing units, roads, water and sewer facilities, etc. -- for the two assumed alternative locations, nor is it necessary to do so. The point of the analysis is to establish that housing costs are almost certain to be substantial and that involvement on the part of Government and/or the company

may be necessary to ensure availability of an adequate number of units.

20.0 Implications of Increased Passenger Traffic

During the construction a considerable number of the workers will have to be moved to and from the work site at regular intervals. Ontario Northland Railway has ten coaches which are used only during the summer months and are currently leased to the GO Transit system in Toronto over the rest of the year. These ten coaches should be more than adequate to handle the number of workers involved, and presumably could be replaced by coaches leased from elsewhere during the summer months when they are in regular service. (12) It would appear therefore that no significant capital expenditures would be required by the Ontario Northland Railway in order to handle the increased loads projected during the construction phase.

In reference to the operating state of the project, it would appear that adequate transportation for off duty workers going to Moosonee and to Cochrane and/or Fraserdale could be provided by reorganization of railway schedules.

(12) Information from Freight Marketing Department, Ontario Northland Railway, North Bay.

More frequent scheduling would perhaps necessitate an addition to railway operating personnel, but would not appear to force capital expenditures for new equipment by the Ontario Northland Railway.

A standard 1D barcode with the number 81 871 000 000 printed below it.

96936000119376

[illegible]

PRINTED IN CANADA